

Sub 7  
D

1. (amended) A method for producing insulating materials having improved resistance to thermal ageing, characterized in that it comprises the steps consisting of:

- dissolving at least one conducting polymer in an organic solvent, so as to form an impregnating solution,
- impregnating granules, formed of an insulating polymer or of a mixture of insulating polymers, with said impregnating solution,
- evaporating the solvent so as to obtain granules of insulating polymer coated with a conducting polymer,
- drying said granules,
- extruding or hot mixing said granules to form a homogeneous mixture in which the conducting polymer represents 10 to 5000 ppm of insulating polymer.

C2

2. (amended) The method according to claim 1, characterized in that the impregnation of the granules is made by dipping the latter in the impregnating solution.

3. (amended) The method according to claim 1, characterized in that the insulating polymer is a thermoplastic resin selected from the group consisting of acrylic, styrene, vinyl resins, cellulose resins, polyolefins, fluorine-containing polymers, polyethers, polyimides, polycarbonates, polyurethanes, silicones, and mixtures of homopolymers and copolymers thereof.

4. (amended) The method according to claim 1, characterized in that the insulating polymer is selected from the group consisting of polyethylene, low density polyethylene, high density polyethylene, linear low density polyethylene, polypropylene, ethylene-propylene-diene terpolymer, fluorine-containing polyvinylidene, and copolymers of ethylene and vinyl acetate, either alone or in a mixture.

5. (amended) The method according to claim 1, characterized in that the insulating polymer is a thermosetting resin selected from the group consisting of polyesters, epoxy resins and phenol resins.

6. (amended) The method according to claim 1, characterized in that the conducting polymer has a conductivity of at least approximately  $10^{-9} \text{S.cm}^{-1}$ .

Sub D2 7  
7. (amended) The method according to claim 6, characterized in that the conducting polymer is a conducting polymer grafted onto an insulating polymer, or a copolymer containing at least one conjugate system.

8. (amended) The method according to claim 6, characterized in that the conducting polymer is selected from the group consisting of polythiophene, polyalkylthiophenes, polyaniline, polypyrrole, polyacetylene, polyparaphenylene, and mixtures thereof.

9. (amended) A material obtained with the method according to any one of claims 1 to 8.

C2  
10. (amended) A method of using the insulating material having improved thermal resistance obtained with the method according to any of claims 1 to 8, for the manufacture of high and/or very high voltage cables.

Sub D3 7  
C3  
11. (amended) The material having improved resistance to thermal ageing according to claim 16, characterized in that the insulating polymer is a thermoplastic resin selected from the group consisting of acrylic, styrene, vinyl resins, cellulose resins, polyolefins, fluorine-containing polymers, polyethers, polyimides, polycarbonates, polyurethanes, silicones, and mixtures of homopolymers and copolymers thereof.

12. (amended) The material having improved resistance to thermal ageing according to claim 16, characterized in that the insulating polymer is selected from the group consisting of polyethylene, low density polyethylene, high density polyethylene, linear low density polyethylene, polypropylene, ethylene-propylene-diene terpolymer, fluorine-containing polyvinylidene, and copolymers of ethylene and vinyl acetate, either alone or in a mixture.

13. (amended) The material having improved resistance to thermal ageing according to claim 16, characterized in that the insulating polymer is a thermosetting resin selected from the group consisting of polyesters, epoxy resins and phenol resins.

*Sub D3*  
*C3*  
14. (amended) The material having improved resistance to thermal ageing according to claim 16, characterized in that the conducting polymer has a conductivity of at least approximately  $10^{-9} \text{S}\cdot\text{cm}^{-1}$ .

---

15. (canceled)

---

*Sub D4*  
16. (new) An insulating material having improved resistance to thermal ageing, containing 10 to 5000 ppm of a conducting polymer dispersed in an insulating polymer and whose heterogeneity size is  $0.1 \mu\text{m}$  or less, as observed under scanning electron microscopy.

*C4*  
17. (new) The material having improved resistance to thermal ageing according to claim 14, characterized in that the conducting polymer is a conducting polymer grafted onto an insulating polymer, or a copolymer containing at least one conjugate system.

18. (new) The material having improved resistance to thermal ageing according to claim 14, characterized in that the conducting polymer is selected from the group consisting of polythiophene, the polyalkylthiopenes, polyaniline, poly-pyrrole, polyacetylene, polyparaphenylene, and mixtures thereof.

---